

CLAIMS

1. A planar antenna assembly mounted on a substrate, said antenna including a first monopole element (14, 42), at least one grounded parasitic element (20; 48, 50) located proximate the first monopole element (14, 42), wherein the separation between the monopole and the grounded parasitic element exhibits a conductive profile (20, 46) which varies the waveguide characteristics of the antenna assembly.
2. An assembly according to claim 1, wherein the conductive profile is provided by a stepped or angled profile on the or each grounded parasitic element (20) which faces and extends away from first monopole element (14).
3. An assembly according to claim 2, including a secondary grounded element located at an outer position relative to the or an associated grounded parasitic element.
4. An assembly according to any preceding claim, including two grounded parasitic elements (20) located on opposite sides of the first monopole element.
5. An assembly according to claim 1, wherein the profile is provided by a first conductive island (46) on the monopole element (42).
6. An assembly according to claim 5, wherein the first conductive island (46) is located to overlap the grounded parasitic element or elements (48, 50).
7. An assembly according to claim 5 or 6, including a second conductive island (44) on the monopole element (42).
8. An assembly according to claim 7, wherein the second conductive island (44) is located at an extremity of the monopole element (42).

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9. An assembly according to any preceding claim, wherein the first monopole element is tuned to operate in a frequency band of substantially 880 MHz to 2025 MHz.
10. An assembly according to any preceding claim, wherein the first monopole element is tuned to operate in the GSM and UMTS frequency bands.
11. An assembly according to any preceding claim, including a second monopole antenna element (12, 12').
12. An assembly according to claim 11, wherein the second monopole element (12, 12') is located at a distance sufficient to avoid mutual coupling between the two monopole elements.
13. An assembly according to claim 11 or 12, wherein the second monopole element (12, 12') is tuned to operate substantially in a wireless network frequency band.
14. An assembly according any one of claims 11 to 13, wherein the second monopole element (12, 12') is tuned to operate substantially in a 2.4-2.5 GHz frequency band.
15. An assembly according any one of claims 11 to 14, wherein the second monopole element (12, 12') is tuned to operate substantially in a Bluetooth or IEEE 802.11b band.
16. An assembly according to any preceding claim, wherein the antenna assembly is substantially flat.
17. An assembly according to any preceding claim, including a conductive element provided on the substrate and not in electrical contact with the parasitic elements of the first monopole element.
18. An assembly according to any preceding claim, including switching means operable to switch between a plurality of sub-bands within the operating band of the first monopole element (14, 42).

19. An assembly according to claim 18, wherein the switching means is operable to provide substantially continuous operation in the or a wireless networking band and selective operation in other wireless bands.

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20. A planar stripline antenna comprising a primary linear monopole antenna element mounted with a proximal end located adjacent a planar ground plane; a double-sheath parasitic element array grounded to the ground plane, said parasitic elements arranged to enclose the proximal end of the monopole, wherein said parasitic elements are shaped so
10 that the distance between the inner edge of the parasitic elements adjacent the proximal end of the monopole and the monopole varies in such a fashion that the bandwidth of the antenna is broadened.

21. An antenna as claimed in claim 20 further including a secondary monopole linear
15 antenna spaced apart from the primary antenna so that coupling effects between the primary and secondary antenna are minimised.

20. A computing or information device including an antenna assembly according to any preceding claim.

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